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ABSTRACT

This document lists the industry-identified core academic knowledge and skills that should be possessed by all Georgia students who are enrolled in occupational cluster programs and are preparing to enter the work force or continue their occupational specialization at the postsecondary level. First, 63 related communications competencies are listed under the following categories: speaking/listening, language, writing, reading, literature, and critical thinking. Listed next are 40 related mathematics competencies in the areas of numbers and computation, data analysis, measurement and geometry, and algebra. A total of 157 related science competencies are presented under the following headings: process/research skills; physical science; basic chemistry; biology; microbiology; human anatomy and physiology; botany; earth science; astronomy; ecology; physics; geology; and science, technology, and society. Concluding the document are 68 related social science competencies under the following headings: world history, world geography, U.S. history, citizenship and government, and social studies skills. (MN)

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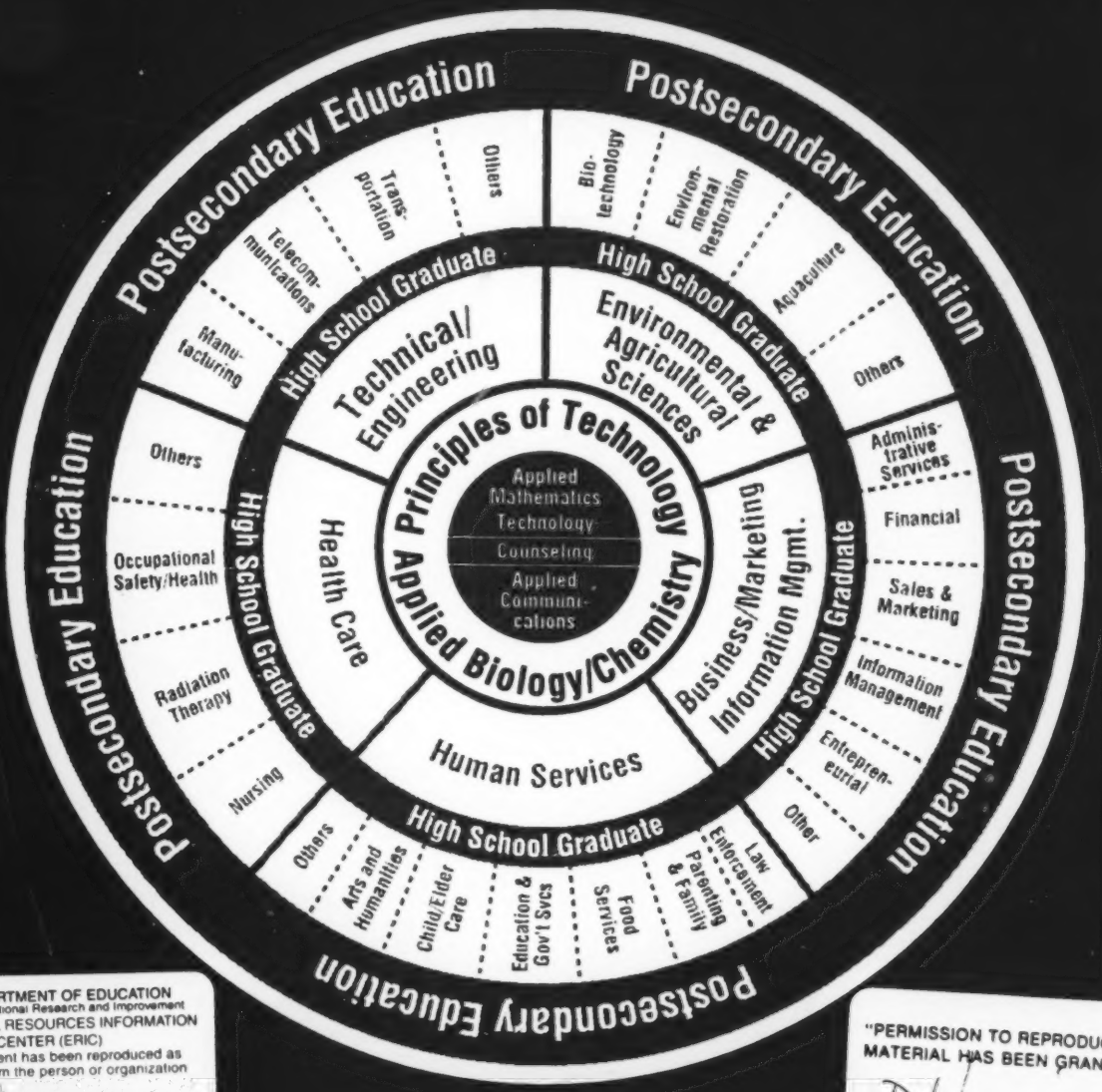
Georgia Core Standards For Occupational Clusters

ED 391 897

Related Core Academic Knowledge and Skills



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Introduction

Concerns about student preparedness for the high performance workforce have spurred the development of national-level skill standards by industry representatives to improve the global competitiveness of U.S. industry. Georgia has taken the initiative at the state level to work with business and industry in identifying core occupational knowledge and skills that offer a framework for career focus in our schools. This career-cluster framework, based on an elevated standard, will afford all students in Georgia's schools the foundation they will need to enter the workforce or to continue occupational specialization and education at the postsecondary level. The concept will also allow students to personalize their learning directions and hasten their preparation in becoming productive citizens.

The Occupational Research Group (in the School of Leadership and Lifelong Learning in the College of Education) at the University of Georgia facilitated for the Georgia Department of Education the development of statewide, industry-validated curriculum standards for academic and occupational skills needed by all students in Georgia. This developmental effort helps meet the goal of establishing a career focusing process in Georgia's schools. These curriculum standards address core knowledge and skill areas common to all program areas, including both school-based and work-based competencies, and are organized around the Georgia Department of Education's five cluster areas or programs of study:

Technical/Engineering
Health Care
Business/Marketing and Information Management
Human Services
Environmental and Agricultural Sciences

The standards for each cluster include the core academic competencies and the non-occupation specific knowledge and skills common to a broad cluster area of occupations. Georgia's skill standards were developed in a systematic manner employing the skills and input of a wide array of stakeholders in the education of Georgians. Phase one of this process involved a thorough investigation of information on existing state and national standards/skills/competencies, professional/trade associations, workforce trends, and acquisition of documents related to skill competencies for each cluster area. The information was compiled into a report on each cluster area for presentation to business/industry Standards Development Teams. This report included a master listing of tasks and competencies identified by other groups, and information on core/basic academic competencies underlying skill performance, organized by the SCANS competency areas.

Phase two of the developmental process featured the establishment of five statewide Standards Development Teams made up of business and industry representatives from across the state, one team for each of the career-cluster areas. Experienced faculty and staff from the Occupational Research Group and the Department of Occupational Studies at the University of Georgia conducted and facilitated meetings. A structured group process was used to review and validate or revise the tasks and competencies from the phase one document. The product of this validation process was then formulated into a survey by project staff and sent to additional business/ industry representatives for each career-cluster for feedback. Next, a grouping of experienced teachers and curriculum specialists from across the state met to review the industry-validated curriculum standards. They identified the supporting academic knowledge and skills for each career-cluster area using the state's Quality Core Curriculum and the graduation exit exam.

The product of our efforts to date is the listing of industry-validated statewide curriculum standards, with core competencies for both work- and school-based knowledge and skills. Because of the continuing changes in occupational skills requirements, an assessment component of the project will be added for reviewing and modifying the career-clusters as necessary.

The standards are an important component of Georgia's School-to-Work Transition initiative and a preliminary step in the adoption of the career-cluster concept. The career-cluster approach to curriculum design is based on the idea that a variety of different occupations/jobs require similar basic skills. It is also based on the belief that certain basic skills and knowledge are essential for all students, regardless of the profession to which they aspire. Students begin by learning these basic common skills; move on to acquire the basic skills necessary for a given group of jobs; then learn the specific applications for a specific job. The career-cluster approach provides school systems with the opportunity to involve larger numbers of students in occupational classes to build a stronger and broader base for further specialization. This broad base makes it possible for individuals to change specialties in the future as job opportunities and/or requirements change and facilitates life-long educational experiences which can enhance individual productivity and happiness.

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Related Communications Competencies

Speaking/Listening

- COM 1 Speaks clearly and expressively
- COM 2 Adapts words and strategies to varying situations and audiences
- COM 3 Recognizes the intention of a speaker and is aware of the techniques a speaker uses to affect an audience
- COM 4 Recognizes and analyzes persuasive techniques
- COM 5 Engages in discussion as both speaker and listener: interpreting, analyzing and summarizing
- COM 6 Contributes to group discussions in language that is readily understood by listeners, i.e., succinct and to the point
- COM 7 Uses language appropriate to the situation and the audience
- COM 8 Presents arguments in orderly and convincing ways
- COM 9 Recognizes and takes notes on important points in lectures and discussions
- COM 10 Uses appropriate criteria to evaluate the messages and the effects of mass communication
- COM 11 Answers and asks questions coherently and concisely and follows spoken instructions
- COM 12 Interprets and assesses various kinds of communications
- COM 13 Engages critically and constructively in the exchange of ideas, particularly during class discussions and conferences with instructors
- COM 14 Identifies and comprehends the main and subordinate ideas in lectures and discussions and reports accurately what others have said
- COM 15 Conceives and develops ideas about a topic for the purpose of speaking to a group, chooses and organizes related ideas, presents them clearly in Standard American English, and evaluates similar presentations by others

Related Communications Competencies

Language

- COM 16 Understands that English usage is shaped by social, cultural, and geographical differences
- COM 17 Learns that English has several different levels of usage and that language appropriate in some situations may not be appropriate in others
- COM 18 Learns that English operates according to grammatical systems and patterns of usage
- COM 19 Learns that words gather meaning from their context and carry connotation
- COM 20 Recognizes that language is a powerful tool for thinking and learning

Related Communications Competencies

Writing

- COM 21 Communicates ideas clearly in writing
- COM 22 Participates in the writing process: prewriting, drafting, revising, editing, proofreading, and publishing
- COM 23 Writes for a variety of purposes including, but not limited to, personal (journals, diaries, stories), social (friendly letters, thank-you notes, invitations), academic (themes, reports, essays, analyses, critiques) and business (letters of application or complaint)
- COM 24 Uses a variety of writing modes such as describing, imagining, telling, explaining, persuading, interpreting, or researching
- COM 25 Writes as a way of generating, discovering and clarifying ideas
- COM 26 Selects and arranges ideas, finds appropriate ways for expressing ideas, and evaluates and revises what is written
- COM 27 Improves personal writing by restructuring, correcting errors, and rewriting
- COM 28 Adapts writing style to various audiences
- COM 29 Develops creative and imaginative expression in writing
- COM 30 Learns the techniques of writing to appeal to and persuade others
- COM 31 Gathers information from primary and secondary sources; writes reports using research; quotes, paraphrases, and summarizes accurately; and cites sources properly
- COM 32 Uses the tools and resources of writers (e.g. dictionaries, thesauri, style manuals, usage handbooks)
- COM 33 Is precise in punctuation, capitalization, spelling, and other elements of manuscript form

Related Communications Competencies

Reading

- COM 34 Recognizes that reading is a vehicle for self-improvement\
- COM 35 Uses literal comprehension skills (e.g., sequencing, explicitly stated main idea)
- COM 36 Uses inferential comprehension skills (e.g., predictions, comparisons, conclusions, implicitly stated main idea, propaganda techniques)
- COM 37 Approaches reading as a search for meaning
- COM 38 Identifies and comprehends the main and subordinate ideas in a written work and summarizes ideas in own words
- COM 39 Recognizes different purposes and methods of writing, and identifies a writer's point of view and tone
- COM 40 Interprets a writer's meaning inferentially as well as literally
- COM 41 Comprehends a variety of written materials
- COM 42 Uses the features of print materials appropriately (e.g., table of contents, preface, introduction, titles and subtitles, index, glossary, appendix, bibliography)
- COM 43 Identifies personal opinions and assumptions in a writer
- COM 44 Varies reading speed and methods according to the type of material and purpose of reading
- COM 45 Defines unfamiliar words by using appropriate word recognition skills

Related Communications Competencies

Literature

- COM 46 Realizes the importance of literature as a mirror of human experience
- COM 47 Identifies with fictional characters in human situations as a means of relating to others
- COM 48 Gains insights into human behavior from the study of literature
- COM 49 Judges literature critically on the basis of personal response and literary quality
- COM 50 Selects and uses a variety of print and nonprint resources to become familiar with and compare literature
- COM 51 Reads a text analytically
- COM 52 Sees relationships between form and content

Related Communications Competencies

Critical Thinking

- COM 53 Distinguishes between fact and opinion
- COM 54 Comprehends, develops, and uses concepts and generalizations
- COM 55 Creates hypotheses and predicts outcomes
- COM 56 Draws reasonable conclusions from information found in various sources
- COM 57 Defends conclusions rationally
- COM 58 Tests the validity of an assertion by examining the evidence
- COM 59 Understands logical relationships
- COM 60 Constructs logical sequences and understands the conclusions to which they lead
- COM 61 Detects fallacies in reasoning
- COM 62 Invents solutions to problems using nonlinear thinking techniques, e.g., creating metaphors, constructing analogies and models, brainstorming, and role-playing
- COM 63 Recognizes that how to think is different from what to think

Related Mathematics Competencies

Numbers and Computation

- MAT 1 Recognizes and distinguishes among different uses of numbers, such as names, counts, measures, scales, codes, and locators
- MAT 2 Expresses numbers in equivalent and approximate forms and orders these forms, using appropriate tools such as calculators (includes fractions, decimals, and percents; scientific notation; square and cube roots, and second and third powers of whole numbers; and approximations of fractions, decimals, and percents)
- MAT 3 Associates arithmetic operations and their properties with real-world situations
- MAT 4 Selects and uses appropriate and efficient methods of computing with decimals, fractions, integers and percents; and of solving proportions (includes mental computation, calculator, computer)
- MAT 5 Determines amounts of money including price, amounts of change, discounts, sales prices, sales tax, interest, and best buy
- MAT 6 Uses estimation strategies such as rounding, front-end estimation, clustering, grouping, adjusting, compensation, and reference point to predict computational results
- MAT 7 Uses estimation and approximation to check the rationality of computational results
- MAT 8 Selects and uses problem-solving strategies and computational tools (mental computation, calculator, estimation, paper and pencil) to solve simple problems involving career, consumer, and leisure applications; evaluates rationality of results

Related Mathematics Competencies

Data Analysis

- MAT 9 Recognizes appropriate real-world situations in which to use and to expect results with exact and approximate numbers
- MAT 10 Uses probabilities correctly to predict outcomes of given events, determines the probability of an event through experiments, and differentiates odds from probability
- MAT 11 Collects (through surveys and experiments) and organizes data into tables, charts, graphs, and diagrams
- MAT 12 Represents organized information using tables, charts, and a variety of graph types with appropriate labels and scales; interprets such displays as found in public media
- MAT 13 Reads and interprets tables, charts, graphs, and diagrams
- MAT 14 Recognizes a wide variety of occupational situations in which information is gathered and displayed using tables, charts, and graphs
- MAT 15 Determines mean, median, mode, and range of data and uses these measures to describe the set of data
- MAT 16 Applies simple statistical techniques to problem-solving situations
- MAT 17 Applies and interprets basic statistical measures such as mean, median, mode, and range

Related Mathematics Competencies

Measurement and Geometry

- MAT 18 Estimates measures in both customary and metric systems
- MAT 19 Estimates and solves problems involving measurement including selecting appropriate tools such as a calculator or mental calculation
- MAT 20 Applies customary or metric units of measure to determine length, area, volume/capacity, weight/mass, time, and temperature (includes evaluating reasonableness and precision of results and reading different scales)
- MAT 21 Identifies items from real life that are commonly measured in metric, customary, or in both systems of units, as well as recognizing the appropriate-sized units to use
- MAT 22 Identifies and differentiates among similar and congruent figures that have been transformed by rotation, reflection, and translation
- MAT 23 Uses proportions to find missing lengths of sides of similar figures and to enlarge or reduce figures
- MAT 24 Solves problems involving similar figures and scale drawings
- MAT 25 Graphs points in the coordinate plane, identifies the coordinates, and uses the concept of coordinates in problem situations (as in reading maps)
- MAT 26 Finds the perimeter and area of plane figures (such as polygons, circles, composite figures) and surface area and volume of simple solids (such as rectangular prisms, pyramids, cylinders, cones, spheres)
- MAT 27 Calculates perimeter and area of plane figures and finds appropriate measures of real objects and their models prior to such calculations for basic polygons and circles
- MAT 28 Recognizes relations among common geometric figures (includes points, planes, angles, lines)
- MAT 29 Identifies lines, angles, circles, polygons, cylinders, cones, rectangular solids, and spheres in everyday objects
- MAT 30 Applies geometric properties, such as the sum of the angles of a polygon property or percent of area of a circle determined by the central angle measure in a pie chart, parallel sides, and angle relations for parallelograms, to real-world drawings
- MAT 31 Draws and measures angles; determines the number of degrees in the interior angles of geometric figures such as right angles and straight angles, circles, triangles, and quadrilaterals; classifies angles (right, acute, obtuse, complimentary, supplementary) and triangles (right, acute, obtuse, scalene, isosceles, equilateral)
- MAT 32 Uses the Pythagorean Theorem to solve problems (includes selecting appropriate tools such as the calculator)

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Algebra

- MAT 33 Simplifies expressions with and without grouping symbols
- MAT 34 Evaluates simple algebraic expressions
- MAT 35 Substitutes known values in formulas and solves problems with formulas
- MAT 36 Identifies and applies mathematics to practical problems requiring direct and inverse proportions
- MAT 37 Translates words into simple algebraic expressions and equations
- MAT 38 Solves simple equations including addition, subtraction, multiplication, division, proportions, and two-step equations
- MAT 39 Identifies ratio and proportion as they appear in real-life situations and solves proportions for missing members in applied problems
- MAT 40 Applies ratios to similar geometric figures as in scale drawings, and with mixtures and compound applications

Related Science Competencies

Process/Research Skills

- SCI 1 Relates and uses terms and processes employed in scientific research
- SCI 2 Defines the research problem
- SCI 3 Selects and uses appropriate reference sources and retrieval systems
- SCI 4 Analyzes, evaluates, and presents information

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Related Science Competencies

Physical Science

- SCI 5 Recognizes that all matter is composed of molecules, atoms, or ions
- SCI 6 Classifies matter according to its composition
- SCI 7 Differentiates between physical and chemical changes
- SCI 8 Applies principles of atomic theory of matter
- SCI 9 Infers the nature of matter
- SCI 10 Analyzes the nature of heat energy
- SCI 11 Demonstrates the implications of energy conservation
- SCI 12 Describes the concept of force
- SCI 13 Analyzes the concept of work
- SCI 14 Explains how machines enable one to do work
- SCI 15 Describes the concept of gravity
- SCI 16 Analyzes linear motion
- SCI 17 Demonstrates how waves interact with matter
- SCI 18 Analyzes electromagnetic waves
- SCI 19 Describes the nature of sound
- SCI 20 Interprets consequences of radioactivity
- SCI 21 Describes various methods of generating electricity
- SCI 22 Differentiates between an insulator and a conductor
- SCI 23 Describes electrical circuits and demonstrates safe uses of electrical devices
- SCI 24 Discriminates relationships among units in electrical circuits
- SCI 25 Analyzes the relationship between an electric current and its magnetic field

Basic Chemistry

- SCI 26 Distinguishes among common acids and bases
- SCI 27 Develops, explains, and uses the concept of pH
- SCI 28 Demonstrates an understanding of introductory concepts and techniques involved in chemistry
- SCI 29 Demonstrates an understanding of current concepts of atomic energy
- SCI 30 Demonstrates an understanding of concepts of periodic properties and chemical bonding
- SCI 31 Demonstrates knowledge and skills in representing compound reactions and quantitative relationships
- SCI 32 Demonstrates an understanding of kinetic theory as it relates to states of matter
- SCI 33 Demonstrates an understanding of the chemistry of acids, bases, and salts
- SCI 34 Demonstrates an understanding of chemical dynamics and equilibrium
- SCI 35 Demonstrates effective use of a systematic research process to solve problems and make decisions about issues related to science

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Related Science Competencies

Biology

- SCI 36 Explains that biology is the science of life and has many different components
- SCI 37 Explains the cellular basis of life
- SCI 38 Analyzes the transport of materials through cell membranes
- SCI 39 Explains homeostasis
- SCI 40 Recognizes that life has a chemical basis
- SCI 41 Deduces that life depends on energy
- SCI 42 Describes theories of organic variation and supporting evidence
- SCI 43 Applies concepts of organic variation
- SCI 44 Employs appropriate terminology when describing sexual reproduction
- SCI 45 Explains the chemical basis of genetic expression
- SCI 46 Relates chemical mutations to genetic diseases
- SCI 47 Applies genetic concepts
- SCI 48 Identifies asexual reproduction, its methods, and its applications to society
- SCI 49 Explains sexual reproduction at the cellular level
- SCI 50 Relates methods of sexual reproduction in plants
- SCI 51 Relates methods of sexual reproduction in animals
- SCI 52 Discriminates relationships when using a classification model to group living things
- SCI 53 Identifies common organisms in the different kingdoms
- SCI 54 Explains the roles of different monerans
- SCI 55 Compares algae and protozoans and relates their importance
- SCI 56 Explains the roles of fungi and the ways in which they affect human beings
- SCI 57 Relates the characteristics and functions of seed plants
- SCI 58 Relates the common characteristics and functions of invertebrates
- SCI 59 Relates the common characteristics and functions of vertebrates
- SCI 60 Infers that all living organisms carry on certain common functions
- SCI 61 Assesses the behavior of organisms in terms of responses which are necessary for their survival
- SCI 62 Identifies and explains the importance of interactions of living and nonliving factors in an ecosystem
- SCI 63 Distinguishes among communities in various areas
- SCI 64 Explains that the community in a given area may change through time
- SCI 65 Relates what constitutes a population and how a population may change through time
- SCI 66 Relates geography and climate to the biome type of a given area
- SCI 67 Assesses the impact of human activity on certain ecological situations
- SCI 68 Explores ways to help solve current ecological problems and to

Related Science Competencies

Microbiology

- SCI 69 Relates and uses terms and processes employed in scientific research
- SCI 70 Recognizes the impact of the invention of the microscope on the field of microbiology
- SCI 71 Discriminates between abiogenesis and biogenesis
- SCI 72 Identifies the nature of contagious disease (the germ theory)
- SCI 73 Applies proper microscopic technique when preparing microscope slides
- SCI 74 Identifies and controls variables in order to maintain pure bacterial cultures
- SCI 75 Evaluates different aseptic techniques
- SCI 76 Assesses the effectiveness of physical and chemical agents on controlling bacterial growth
- SCI 77 Compares and contrasts cellular differences used in the classification of microbes
- SCI 78 Compares and contrasts prokaryotic and eukaryotic microorganisms

Related Science Competencies

Human Anatomy and Physiology

- SCI 79 Relates and uses scientific research terms and processes
- SCI 80 Describes the interrelationships among physiology and other sciences
- SCI 81 Analyzes the overall organization of the human body
- SCI 82 Illustrates the relationship among basic chemical and physical processes
- SCI 83 Describes the general characteristics of a cell
- SCI 84 Lists methods by which substances enter and leave a cell
- SCI 85 Describes the life cycle of a cell and explains cell reproduction
- SCI 86 Analyzes the general characteristics and functions of the four tissue types
- SCI 87 Analyzes the importance of homeostasis for living things
- SCI 88 Analyzes the importance of skeletal function to the general health of the body
- SCI 89 Classifies joints based on the amount of movement possible
- SCI 90 Identifies the three types of muscles and describes their role in movement, heat production, and maintaining temperature
- SCI 91 Analyzes the interaction of muscles to produce movement
- SCI 92 Identifies neurons as structural and functional units specialized to react to changes in their surroundings
- SCI 93 Describes the two major divisions of the nervous system
- SCI 94 Traces the pathway of a nerve impulse producing a reflex action
- SCI 95 Analyzes the physiology of various sense receptors
- SCI 96 Determines the role of the nervous system in conditioned responses, learning, speech, posture, movement, and sleep
- SCI 97 Demonstrates an understanding of the relationship between the nervous and endocrine systems in controlling body activities
- SCI 98 Describes the location and function of selected endocrine glands
- SCI 99 Analyzes the role of hormones as regulators
- SCI 100 Demonstrates an understanding of the role of the circulatory system for transport and exchange of materials throughout the body and its contribution to all bodily functions
- SCI 101 Describes the means by which the heart provides blood for the metabolic requirements of all body cells
- SCI 102 Describes the relationship between the circulatory and lymphatic systems
- SCI 103 Recognizes the role of the respiratory system in obtaining oxygen and removing carbon dioxide
- SCI 104 Describes the mechanics of breathing
- SCI 105 Describes the chemical and barometric physiology involved in respiration

Continued on Next Page

Related Science Competencies

Human Anatomy and Physiology *continued*

- SCI 106 Explains how the digestion and absorption of food is accomplished by each organ/gland of the alimentary system
- SCI 107 Analyzes factors which may lead to skin malnutrition together with hair follicles, sebaceous glands, and sweat glands in providing vital functions
- SCI 111 Recognizes the role of the reproductive system as the continuation of the species and the role of each organ in achieving that function
- SCI 112 Demonstrates effective use of a systematic research process to solve problems and make decisions about scientific issues

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Botany

- SCI 113 Describes primary and secondary root growth
- SCI 114 Describes primary and secondary stem growth
- SCI 115 Distinguishes among the structures and functions of parts of a leaf
- SCI 116 Demonstrates an understanding of the importance of water to plant functions
- SCI 117 Demonstrates an understanding of the relationship of plant structure and function to the environmental factors that affect growth distribution
- SCI 118 Demonstrates an understanding of the economic importance of plants in medicine, culture, and industry

Related Science Competencies

Earth Science

- SCI 120 Demonstrates a basic understanding of the ways in which the earth's features are formed
- SCI 121 Demonstrates a basic understanding of the historical record of change contained within the earth
- SCI 122 Demonstrates a general understanding of the Earth's place in the universe

Related Science Competencies

Astronomy

- SCI 123 Compares and contrasts the distance and size relationships among planets in the solar system
- SCI 124 Recognizes observable motions and physical characteristics of a planet
- SCI 125 Distinguishes orbital characteristics of meteors, asteroids, and comets
- SCI 126 Researches the discoveries of the outer planets
- SCI 127 Relates the significance of our space program to a more complete understanding of our solar system and to the potential for beneficial discoveries
- SCI 128 Explains the life cycle of a star
- SCI 129 Classifies stars according to standard criteria
- SCI 130 Identifies early theories concerning the stars (fixed points on a crystal sphere and the legends that grew up around the stars)
- SCI 131 Traces the historic progress of how stellar distances were measured
- SCI 132 Analyzes the impact of the fusion reaction first discovered in stars on society
- SCI 133 Develops the concept of supernova and the possible ramifications of such an event
- SCI 134 Identifies three apparent motions of the sun as observed from Earth
- SCI 135 Recognizes that the sun was treated as an ancient deity
- SCI 136 Evaluates the economical harnessing of solar energy and its significance for humankind
- SCI 137 Distinguishes the Milky Way from other galaxies and investigates alternative energy production outside the solar system
- SCI 138 Compares universe formation ideas and formulates additional theories based on existing evidence

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Related Science Competencies

Ecology

- SCI 139 Describes both abiotic and biotic features of an ecosystem and explains their interrelationship, understanding biotic factors in an ecosystem
- SCI 140 Demonstrates an understanding of the need for a constant supply of energy and the vital role of the sun and green plants
- SCI 141 Demonstrates the ability to determine the rates of change of populations and the factors that influence them
- SCI 142 Analyzes types of adaptations of organisms in relation to different biomes and niches

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Related Science Competencies

Physics

- SCI 143 Demonstrates an understanding of basic principles of electricity
- SCI 144 Demonstrates an understanding of fundamental concepts of particle physics

Related Science Competencies

Geology

- SCI 145 Scientifically investigates natural aspects of the earth, recognizing that it is composed of rocks and minerals and powered by energy sources that produce predictable changes in the earth's interior and crust
- SCI 146 Demonstrates an understanding of the vast amounts of time over which geologic processes have been at work through an investigation of the establishment of relative and absolute time sequences to correlated, widely separated, rock sequences occurring over the earth's surface
- SCI 147 Demonstrates an understanding of the relationships among the biological, geological, and chemical components present in selected gaseous and sedimentary cycles in order to assess the effects that human beings may have on the delicate balance of these essential recycling systems
- SCI 148 Demonstrates an understanding of typical geological landform structures, the major forces that produce each type of landform, and the economic impact that the constantly accumulated waste products formed during the landform's origin and demise generate
- SCI 149 Demonstrates an understanding of a continually shifting earth's crust, capable of producing changes exemplified by mountain zones, mid-oceanic ridges, volcanic island arcs, volcanoes, earthquake zones, oceanic trenches, and craton accumulations
- SCI 150 Develops an historical perspective about the geological development of Georgia
- SCI 151 Demonstrates an understanding of renewable and nonrenewable earth materials needed for energy sources, industrial production, and construction projects and identifies the locations of Georgia's major geologic resources and potential solutions to dwindling supplies of raw materials
- SCI 152 Demonstrates an understanding of the rapidly developing field of resource exploration and the technical expertise necessary to fill geological career slots of the future

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Related Science Competencies

Science, Technology, and Society

- SCI 153 Demonstrates an understanding of the functioning of natural ecosystems, ways in which human activities have affected natural ecosystems, and the role of legislation in environmental protection
- SCI 154 Demonstrates an understanding of the major resources needed in industrial/technical societies, the roles of various governmental agencies involved with resource management and allocations, and the process of predicting future resource needs for a given society
- SCI 155 Demonstrates an understanding of various pollution problems, their effects on society, and efforts to control and prevent pollution
- SCI 156 Demonstrates an understanding of current world populations growth patterns, and explains current attempts at solving population problems
- SCI 157 Demonstrates accepted methods, processes, and procedures for conducting scientific study

Related Social Science Competencies

World History

- SOC 1 Identifies changes brought about by the scientific and commercial revolutions
- SOC 2 Identifies and analyzes selected problems and current issues of the interdependent world (e.g., population, food supply, nuclear weapons, terrorism)
- SOC 3 Identifies the major revolutions of the 20th century: agricultural, technological, medical, and cultural

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Related Social Science Competencies

World Geography

- SOC 4 Identifies the physical characteristics of geographic land areas (e.g., plateaus, plains, mountains)
- SOC 5 Explains how regions may be defined by cultural or physical features
- SOC 6 Explains how location influences activities and processes that occur in different places
- SOC 7 Realizes that knowledge of locations and their characteristics is a key factor in understanding human interdependence
- SOC 8 Describes several ways in which people inhabit, modify, and adapt culturally to different physical environments
- SOC 9 Gives examples of ways people evaluate and use natural environments to extract needed resources, to grow crops, and to create settlements
- SOC 10 Realizes that few places are self-sufficient and, therefore, extensive human networks of transport and communications link places together

Related Social Science Competencies

United States History

- SOC 11 Traces European exploration and rivalry in the discovery and settlement of the New World
- SOC 12 Analyzes the events and scientific changes that led to the founding of the New World
- SOC 13 Identifies and analyzes the social and economic patterns that developed in the American colonies
- SOC 14 Identifies and analyzes the causes of the American Revolution
- SOC 15 Analyzes the Bill of Rights in the Constitution as it applies to the citizens of the United States today
- SOC 16 Traces and describes the growth of the young nation (1789-1840)
- SOC 17 Traces the growth and role of U.S. political parties
- SOC 18 Identifies and analyzes the causes and events leading to the Civil War
- SOC 19 Traces the development of the Industrial Revolution in the United States
- SOC 20 Examines the growth of major U.S. cities
- SOC 21 Traces and analyzes the developments which led to America emerging as a world power
- SOC 22 Identifies the causes and describes the effects of World War I on the United States
- SOC 23 Analyzes the social changes in America from 1900-1937
- SOC 24 Analyzes the role of business in the growth of the United States between 1900-1937
- SOC 25 Identifies the characteristics of the American economic system and analyzes the role of economic incentives for producers and consumers
- SOC 26 Describes the development of organized labor in the American economy and identifies and analyzes current issues facing organized labor
- SOC 27 Describes the structure and organization of the banking system and the effects of the Federal Reserve System's implementation of monetary policy on the economy
- SOC 28 Analyzes the economic causes and effects of the Crash of 1929
- SOC 29 Examines and analyzes the causes and effects of New Deal Policy from 1932 to the present
- SOC 30 Evaluates social protest movements and the demand for reforms in the post-World War II period to the present
- SOC 31 Examines the intellectual, cultural, and technological changes of the post- World War II period to the present
- SOC 32 Differentiates among traditional, command, and market economies with regard to such characteristics as the ownership of property, distribution of wealth, role of government, and role of economic incentives
- SOC 33 Explains why countries trade and how economic specialization promotes foreign trade and interdependence among nations

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Related Social Science Competencies

Citizenship and Government

- SOC 34 Examines the concepts of Constitutionalism and federalism as the framework within which the U.S. government is organized and operates at national, state, and local levels
- SOC 35 Explains the structure and function of government (executive, legislative, judicial)
- SOC 36 Examines the growth and role of political parties and explains why the two-party system prevails
- SOC 37 Selects examples which illustrate the role and responsibilities of the individual in promoting effective democratic government
- SOC 38 Explains the basic principle of individual rights and freedoms within the framework for the general welfare
- SOC 39 Examines the foundations of the American judicial/legal system
- SOC 40 Identifies the structure, purpose, and processes of the American judicial/legal system
- SOC 41 Analyzes the rights of the individual guaranteed in the Constitution of the United States
- SOC 42 Examines the roles and responsibilities of a citizen in a democratic society
- SOC 43 Identifies basic beliefs and values of the democratic heritage

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Related Social Science Competencies

Social Studies Skills

- SOC 44 Locates main ideas in multiple types of sources, e.g., nonprint, specialized references, periodicals, newspapers, atlases, yearbooks, government publications, etc.
- SOC 45 Uses features of books for information: table of contents, glossary, index, appendix, bibliography
- SOC 46 Distinguishes between fact and opinion relating to U.S. history
- SOC 47 Develops and interprets charts, tables, timelines, graphs, diagrams and other graphic aids
- SOC 48 Distinguishes between primary and secondary sources and determines respective uses
- SOC 49 Determines sequence of events and identifies cause and effect relationships
- SOC 50 Analyzes interpretations of the same event from multiple types of sources
- SOC 51 Acquires and processes information by using thought processes (recall, translation, interpretation, application, analysis, synthesis, evaluation)
- SOC 52 Identifies and defines a problem related to U.S. history
- SOC 53 Formulates possible alternatives/solutions to a problem
- SOC 54 Collects evidence using appropriate, reliable data
- SOC 55 Chooses a reasonable solution from among the various alternatives
- SOC 56 Computes differences between time zones
- SOC 57 Relates the past to the present in the study of change and continuity in human affairs
- SOC 58 Makes timeline sequencing a series of events
- SOC 59 Uses cardinal and intermediate directions to locate various cultural, political, and natural features on the earth
- SOC 60 Uses a grid system to find exact locations
- SOC 61 Determines direction from the study of maps and globes
- SOC 62 Uses circle measurements in degrees, minutes, and seconds
- SOC 63 Uses map scale to determine distance
- SOC 64 Demonstrates that scales can be expressed in alternative formats
- SOC 65 Uses map keys and legends to correctly interpret response, product, historic, physical, political and economic maps
- SOC 66 Draws conclusions based on multiple pieces of information included on maps
- SOC 67 Uses maps and globes to explain geographic settings of historic and current events
- SOC 68 Makes generalizations about human activities in a geographic region using map information

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